









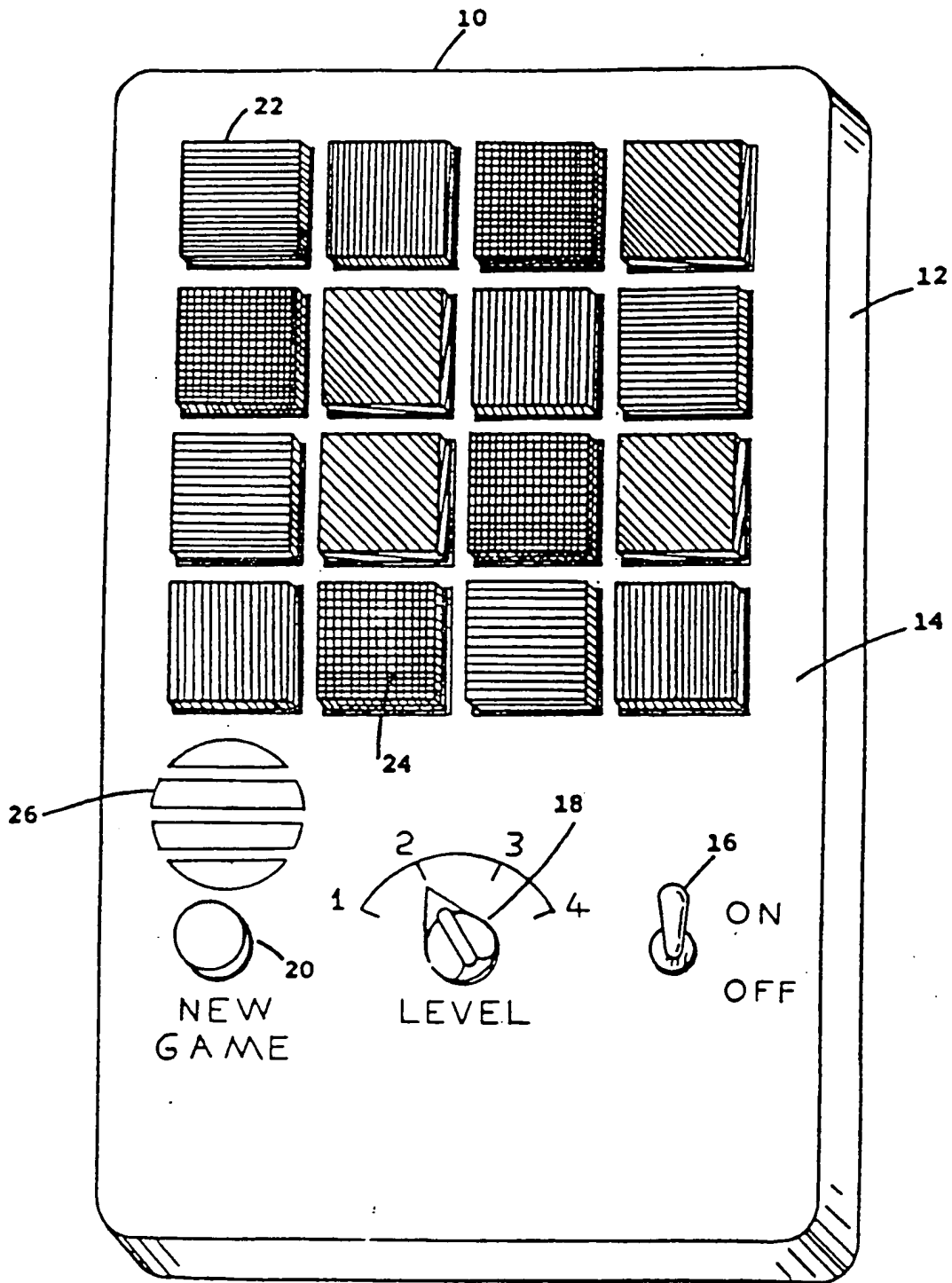
B: BOOLEAN FUNCTION

OBJECT								
OP-CODE	000	001	010	011	100	101	110	111

GEOMETRIC LAYOUT OF DEVICE FOR N = 4

FIG. 1

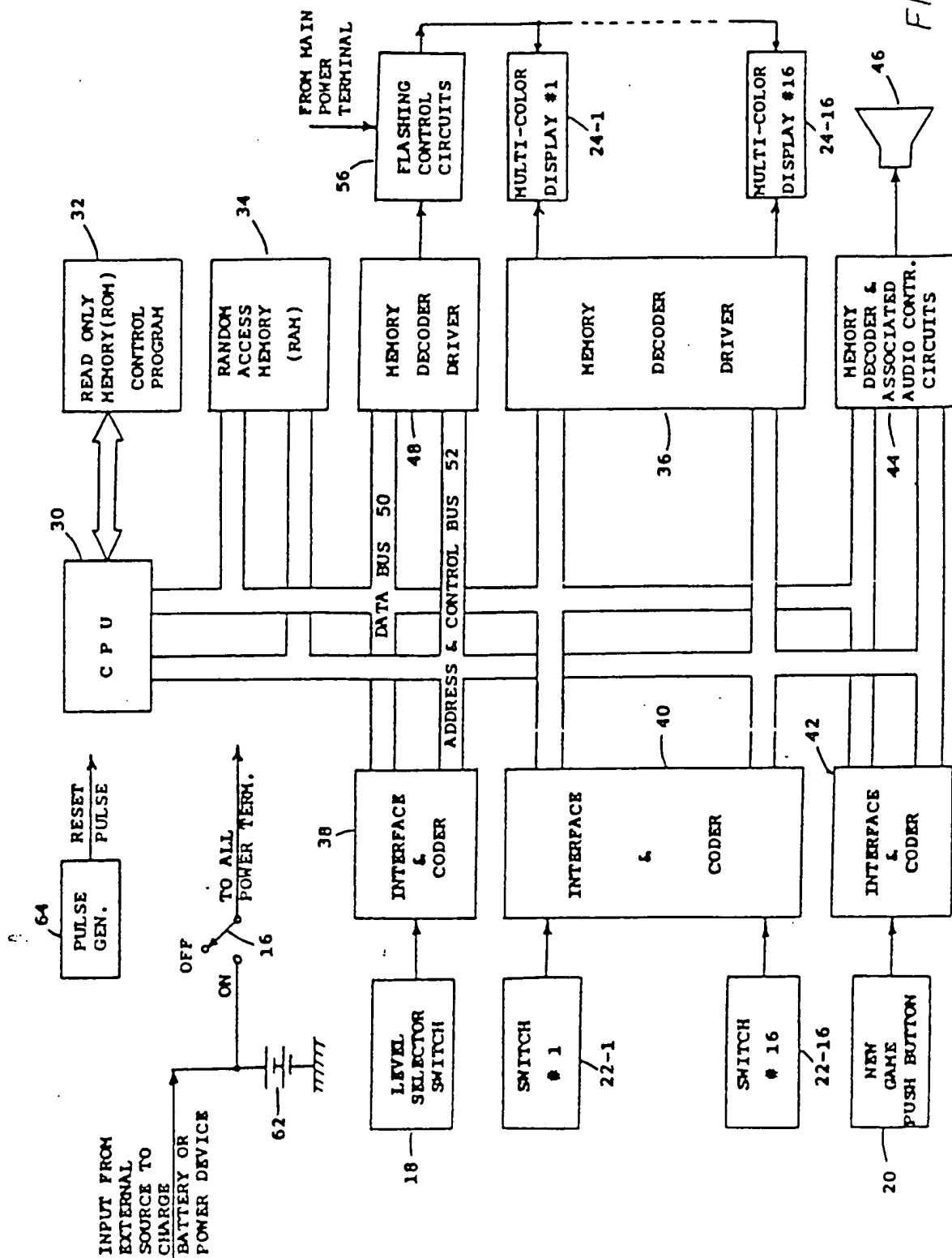
A diagram of a square lattice with nodes labeled  $x$  and  $v$ . The lattice is divided into four quadrants by a horizontal and vertical line. The nodes are labeled as follows: top-left is  $x$ , top-right is  $v$ , bottom-left is  $x$ , and bottom-right is  $v$ . The edges are labeled with  $i, j$  and  $b$ . The top edge is labeled  $t_{i,j}$ , the right edge is labeled  $r_{i,j}$ , the bottom edge is labeled  $b_{i,j}$ , and the left edge is labeled  $l_{i,j}$ . There are also labels  $i$  and  $j$  near the bottom-left node. Dashed lines with arrows indicate connections between nodes, and solid lines with arrows indicate connections to the edges. Ellipses ( $\dots$ ) indicate connections to other parts of the lattice.



HAND HELD LOGIC GAME DEVICE

FIG. 3

FIG. 4



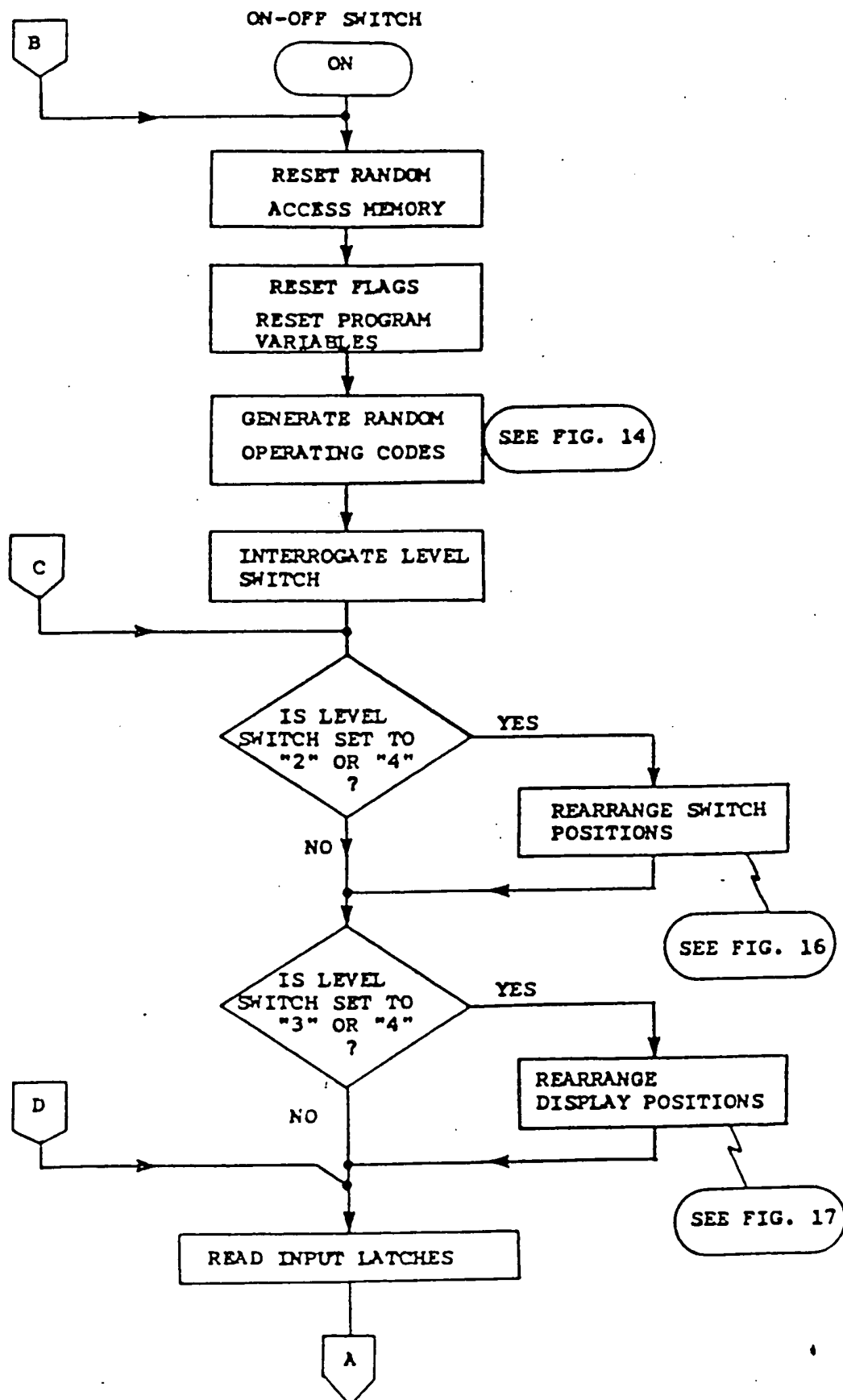


FIG. 5

08 ~~SECRET~~  
962971

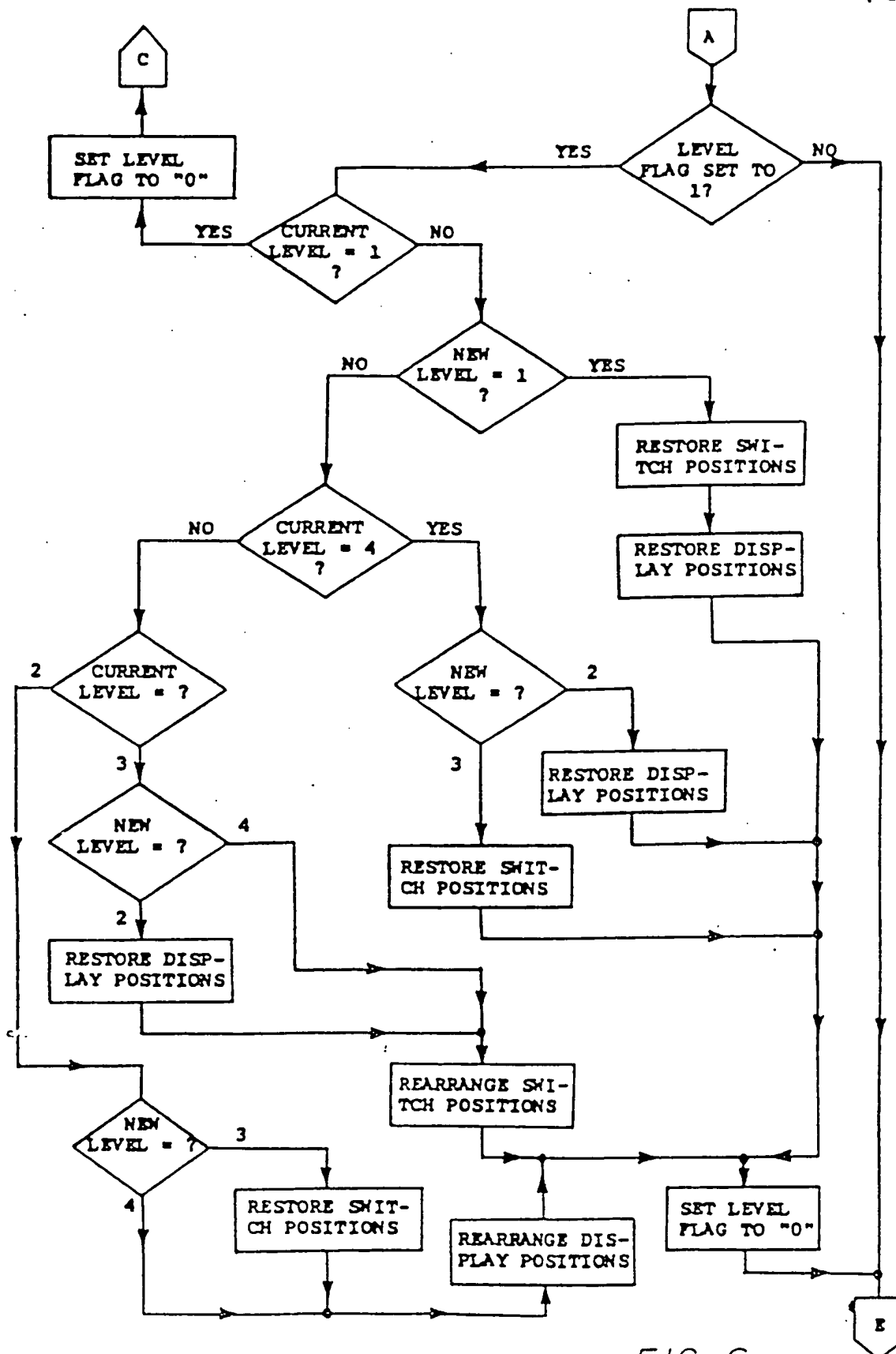


FIG. 6

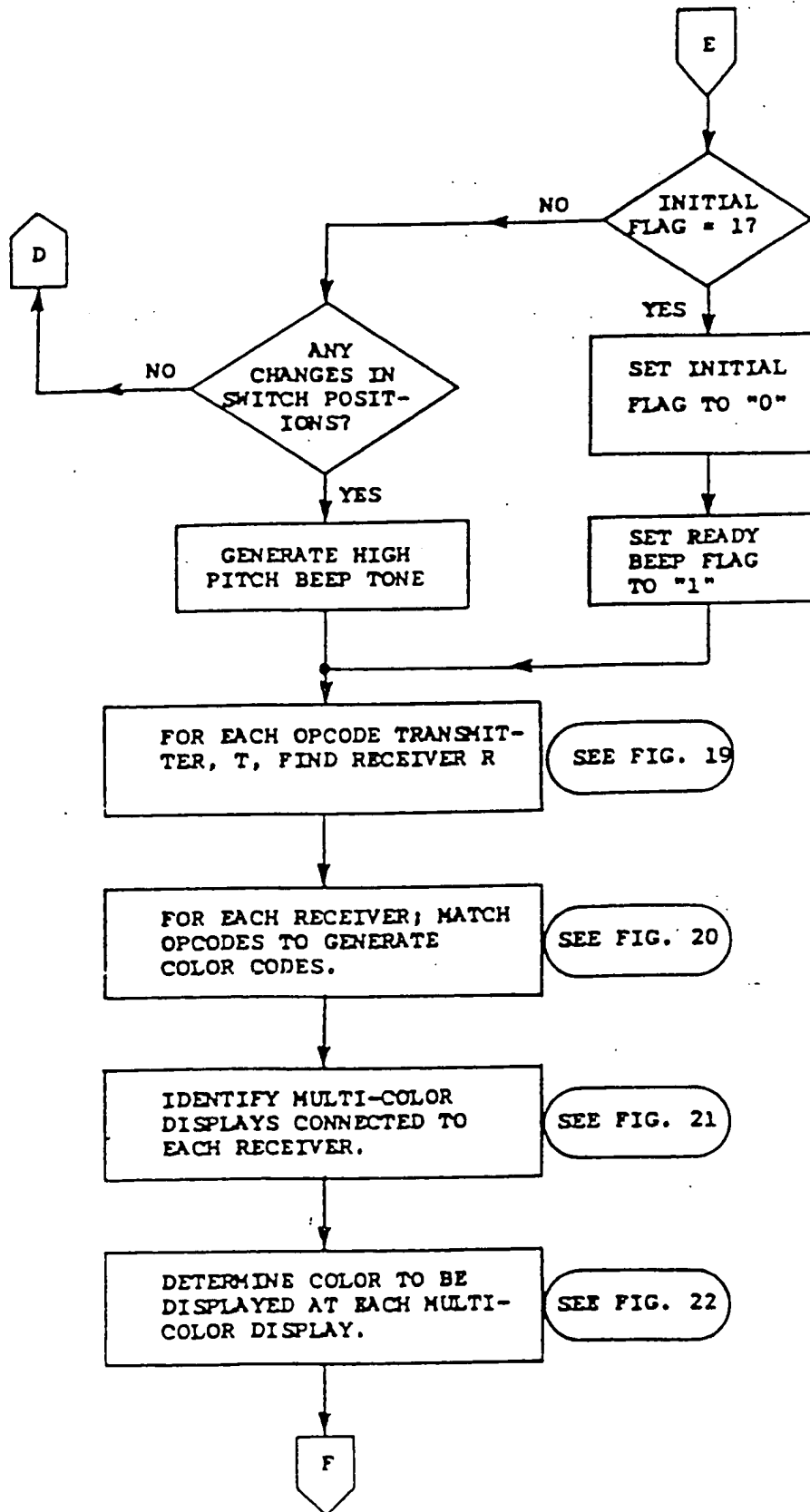


FIG. 7

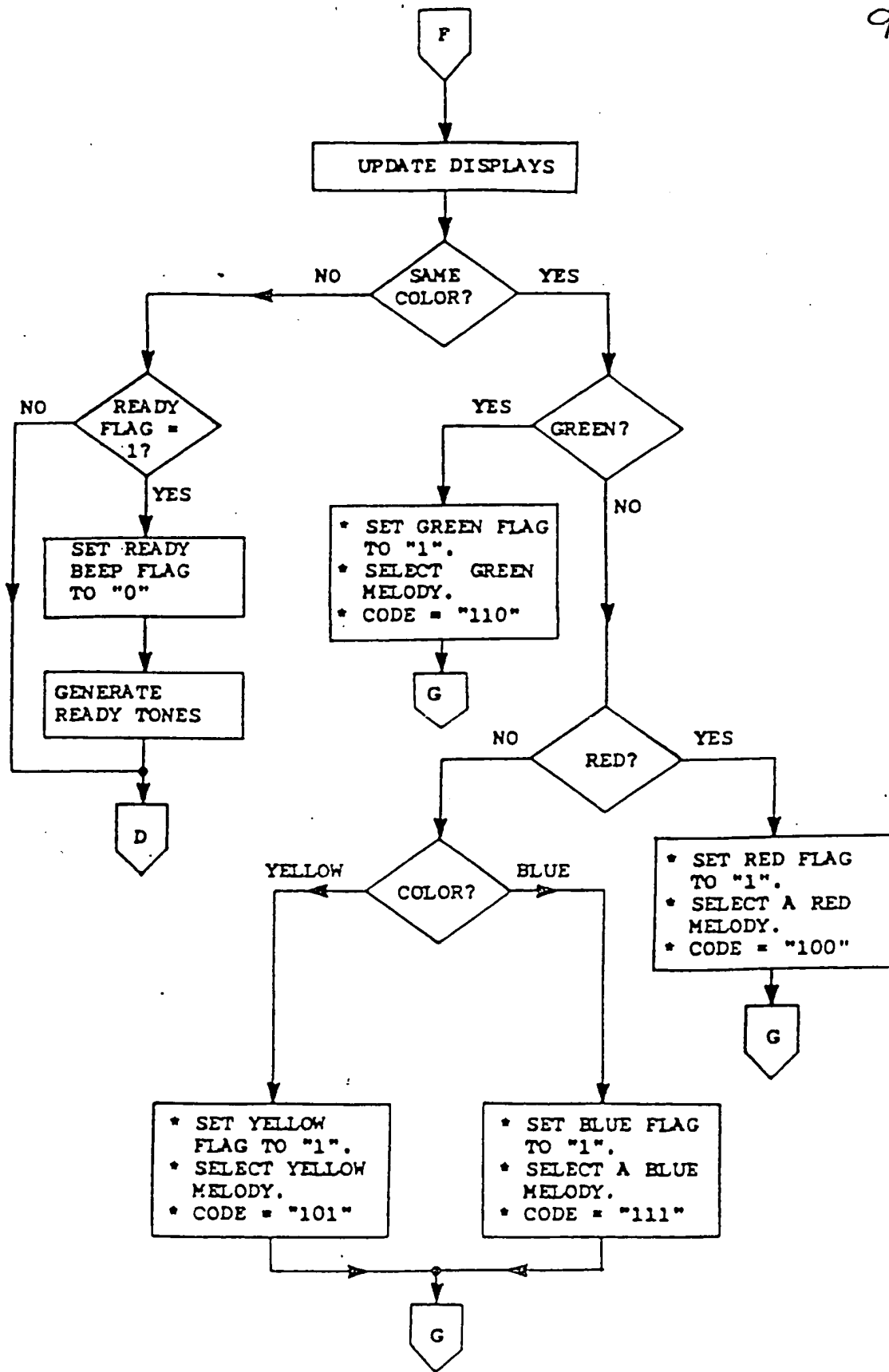


FIG. 8



377589  
377589  
377589  
962971

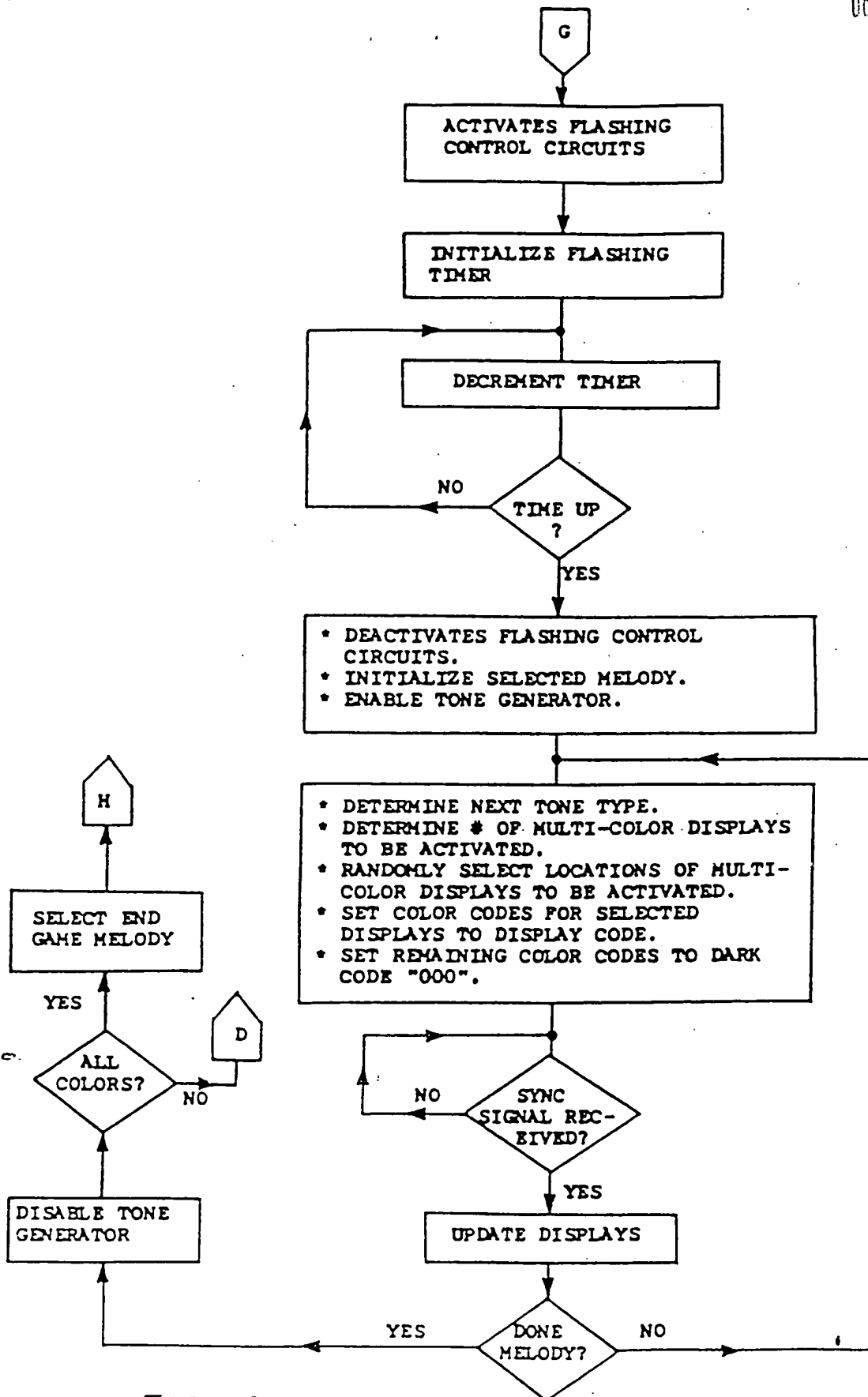


FIG. 9

00 ~~SECRET~~  
962971

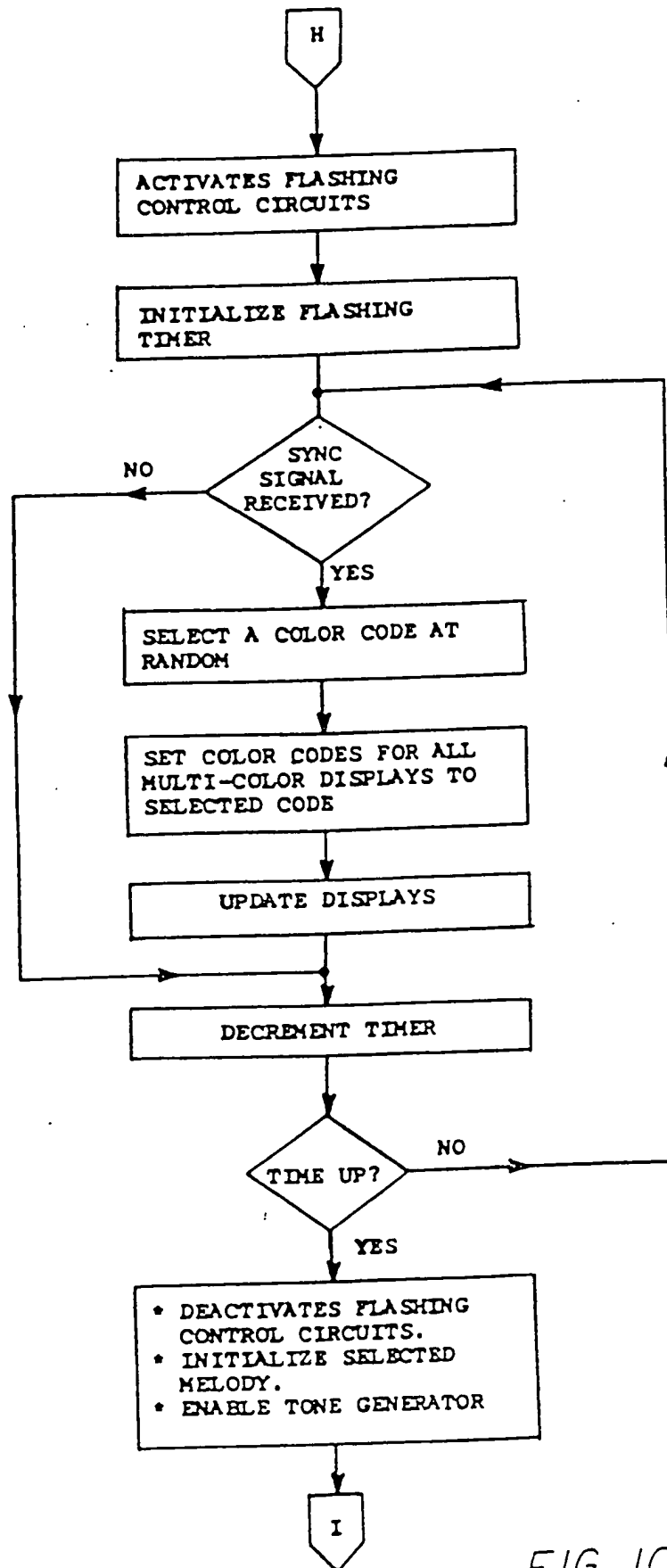


FIG. 10

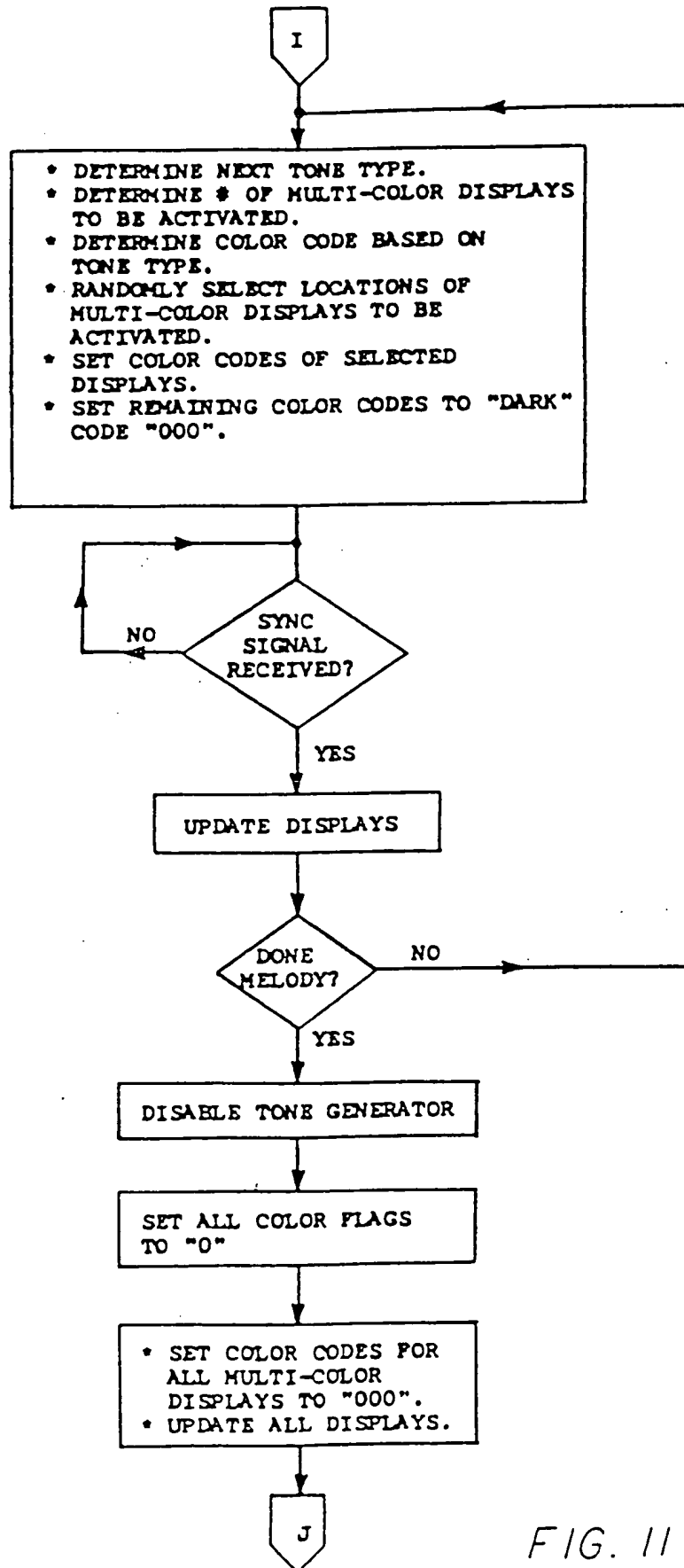


FIG. 11

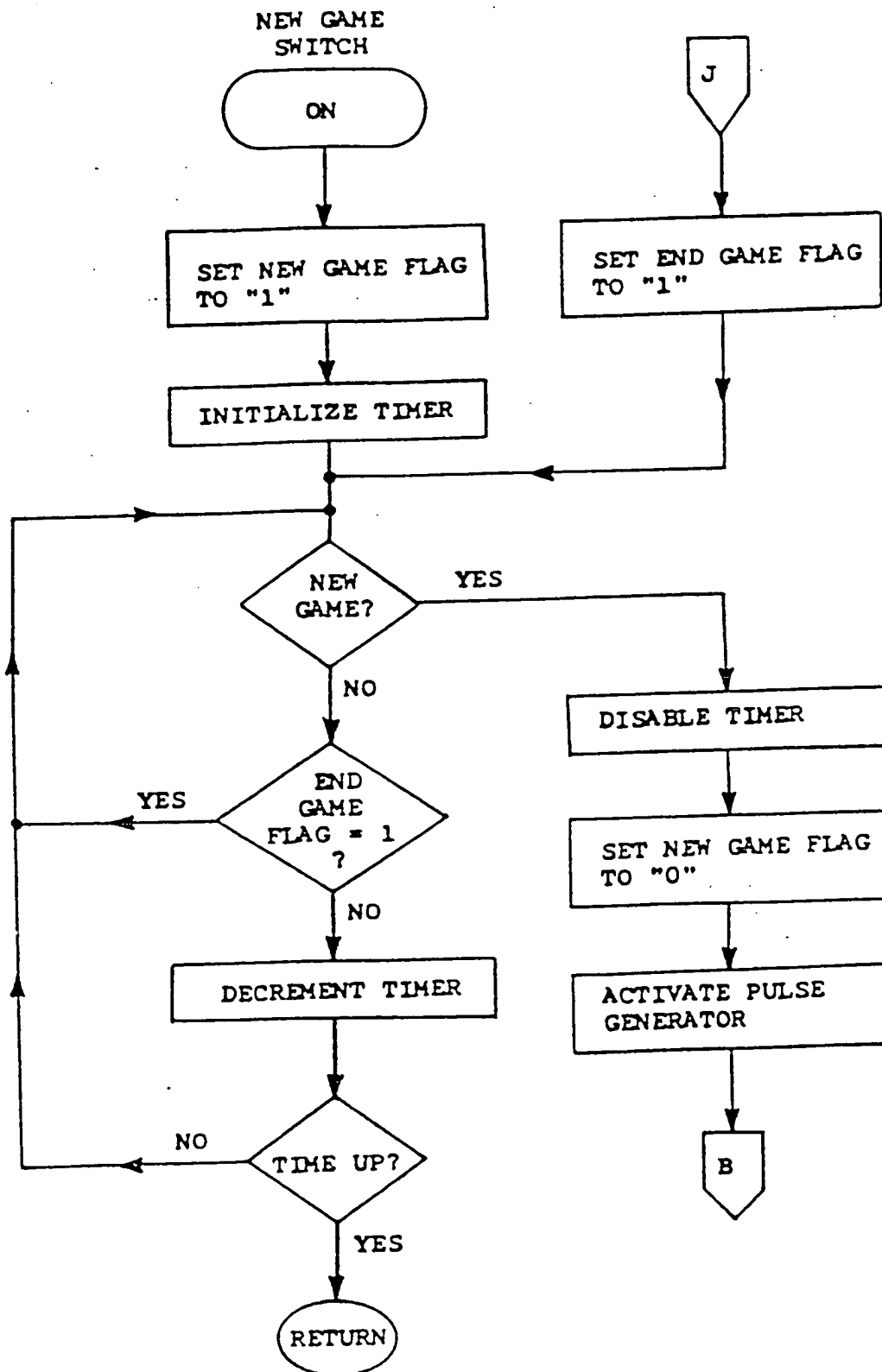


FIG. 12

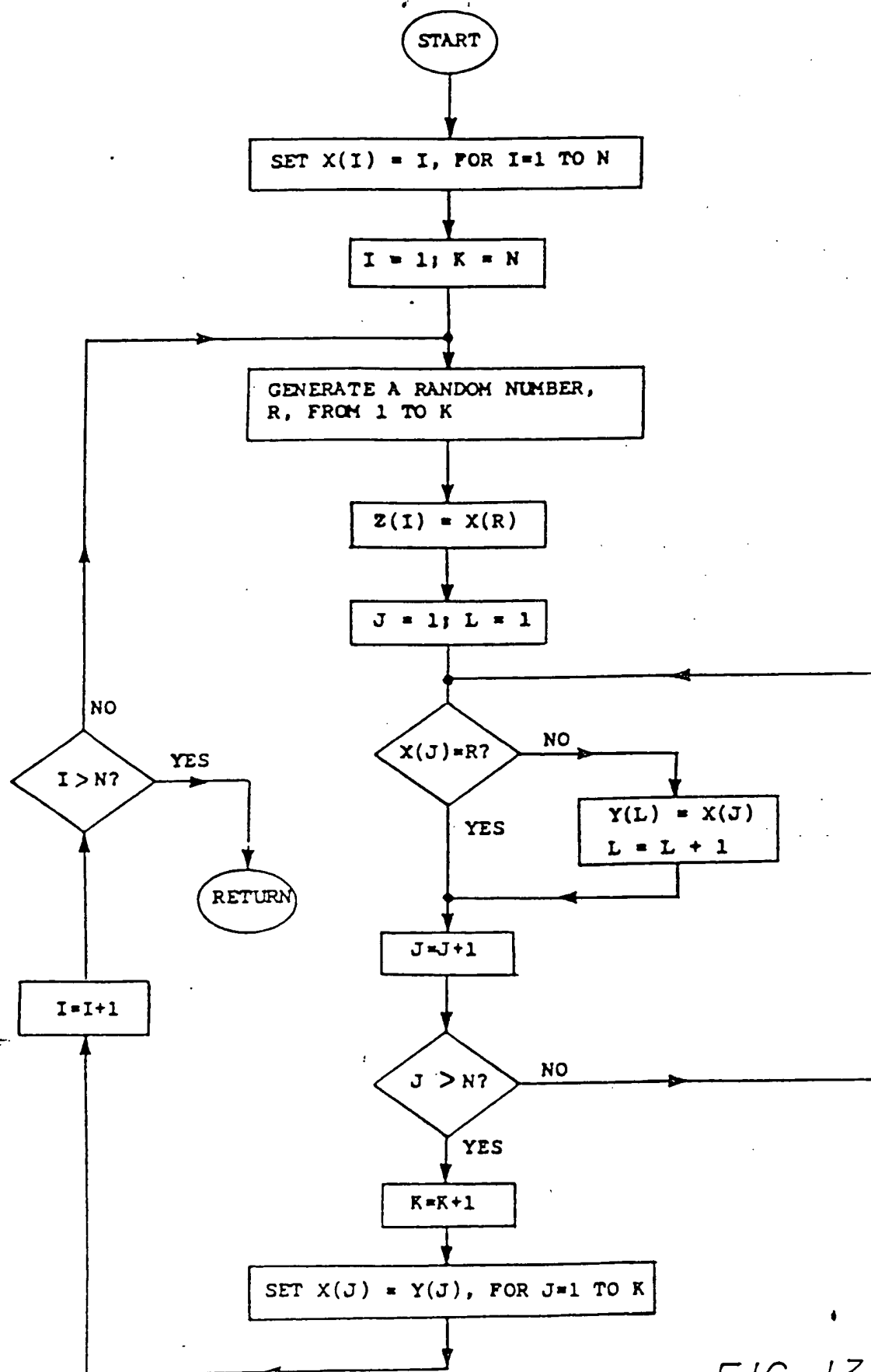


FIG. 13

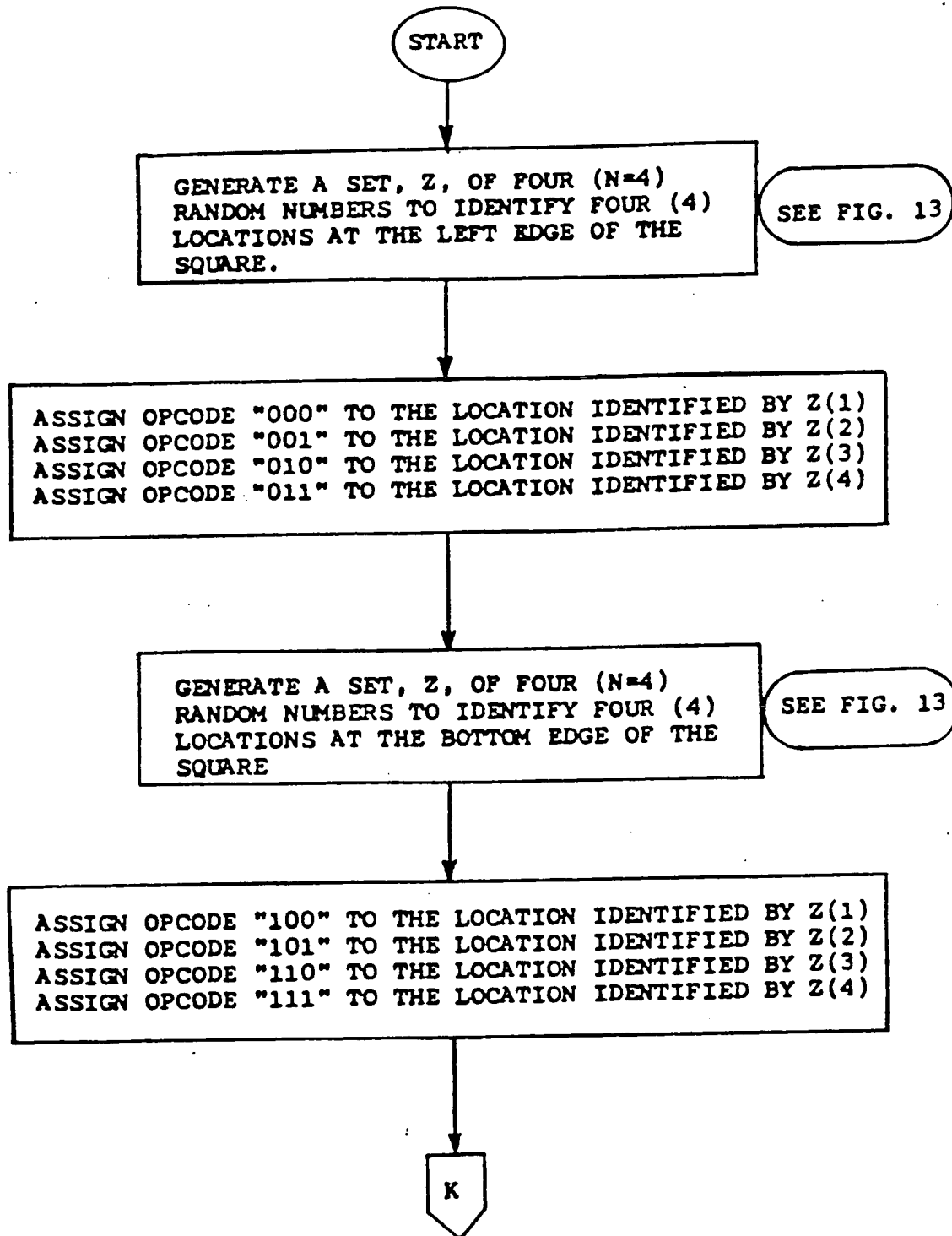


FIG. 14

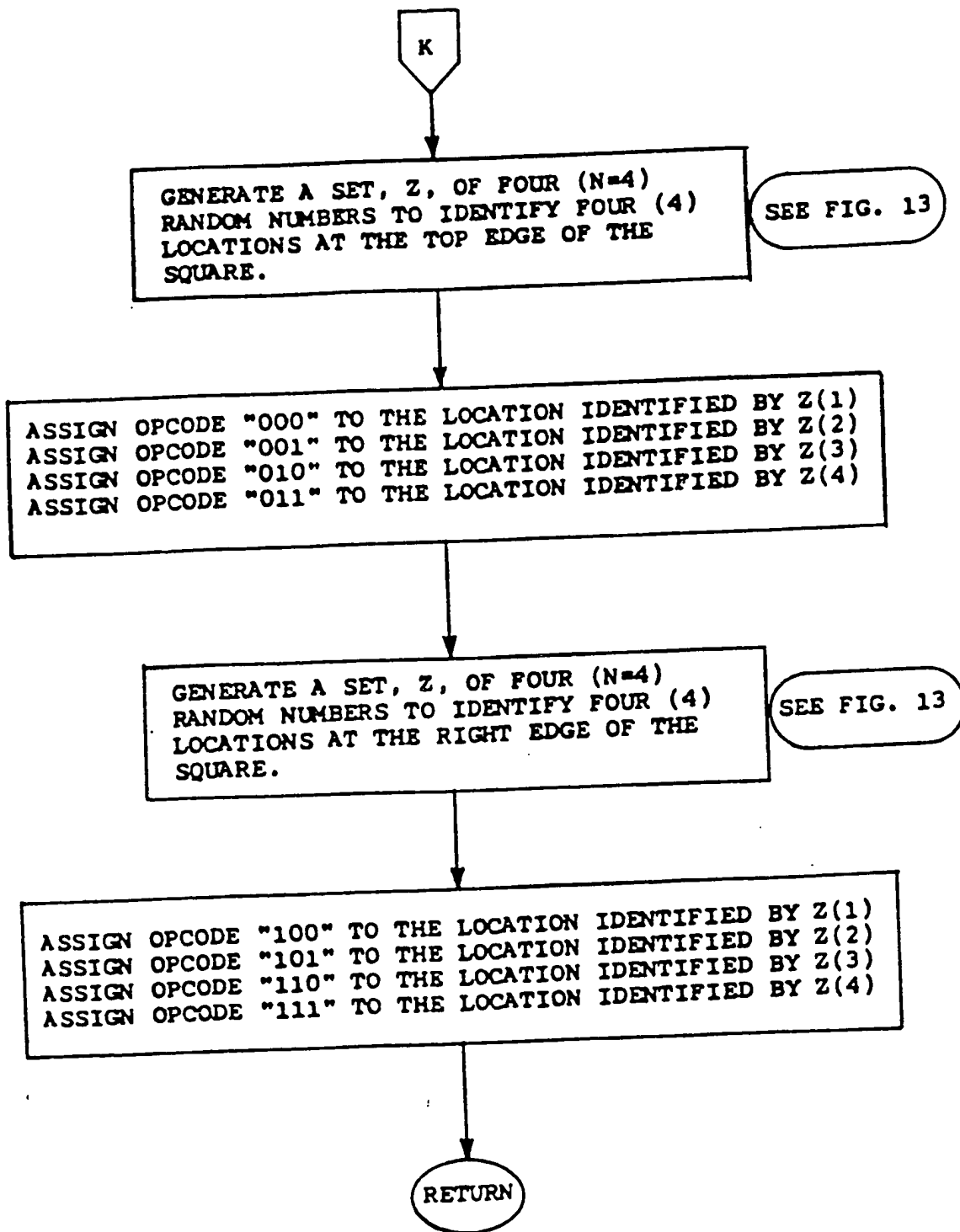


FIG. 15

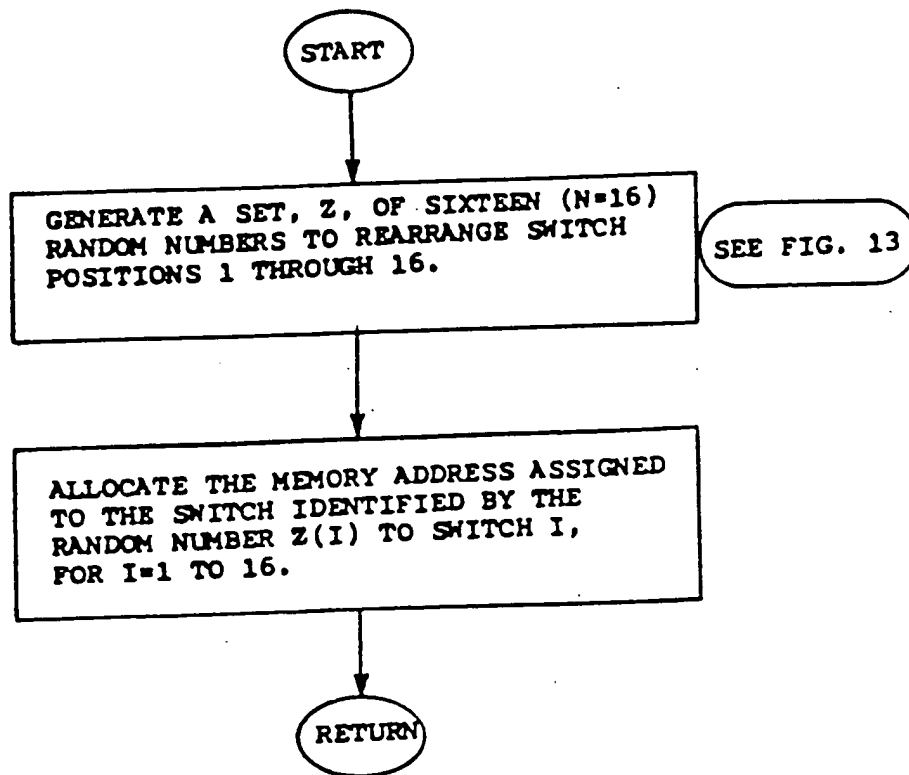


FIG. 16

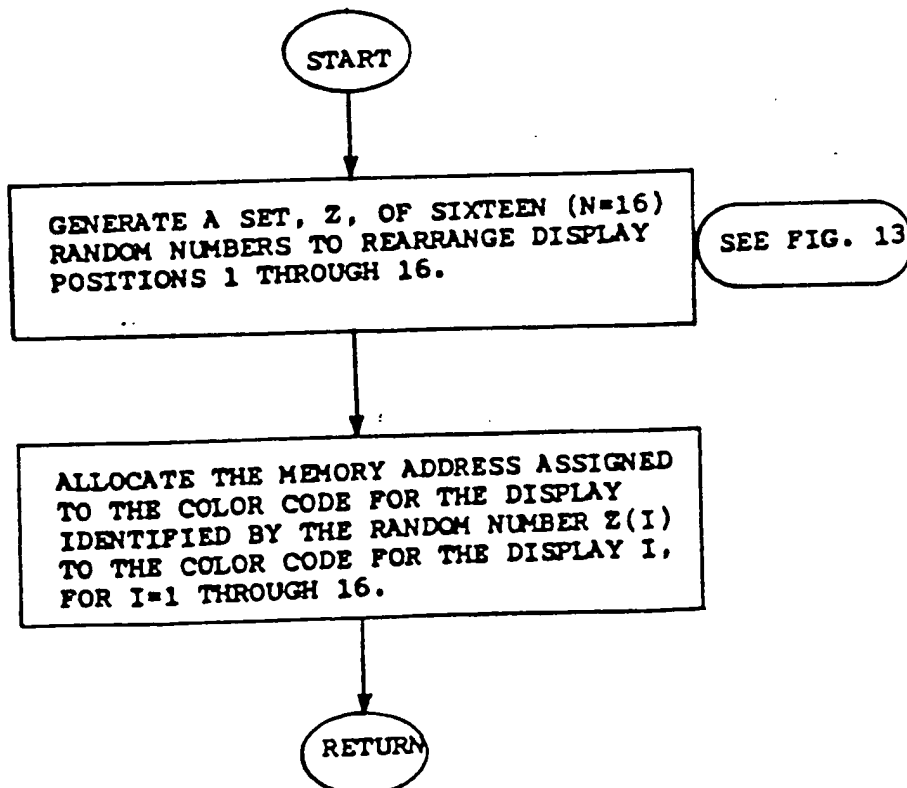


FIG. 17



LEGEND

- N : DIMENSION OF LOGIC GAME = NUMBER OF PREDETERMINED COLORS WHICH MAY BE DISPLAYED.  
 = 4 (FOR THE PREFERRED EMBODIMENT)
- n : NUMBER OF BINARY BITS IN OPCODE AND COLOR CODE.  
 =  $\ln N + 1 = 3$  (FOR THE PREFERRED EMBODIMENT)
- I : ROW NUMBER I,  $I = 1, \dots, N$
- J : COLUMN NUMBER J,  $J = 1, \dots, N$
- DIR : ROUTE DIRECTION BETWEEN TWO ADJACENT ROUTING SQUARES;  
 "R" DENOTES RIGHT  
 "U" DENOTES UP  
 "L" DENOTES LEFT  
 "D" DENOTES DOWN
- T : OPCODE TRANSMITTER;  $T = 1, \dots, 2N$
- R : OPCODE RECEIVER;  $R = 1, \dots, 2N$
- RC(T) : RECEIVER CONNECTED TO TRANSMITTER "T"
- TC(R) : TRANSMITTER CONNECTED TO RECEIVER "R"
- W(I,J) : STATUS OF SWITCH LOCATED AT ROW "I" AND COLUMN "J"
- TCODE(T) : OPCODE AT TRANSMITTER "T"
- RCODE(R) : OPCODE AT RECEIVER "R"
- C(R) : COLOR CODE AT RECEIVER "R"
- x(i) : THE  $i$ th BIT OF OPCODE "X"
- y(i) : THE  $i$ th BIT OF OPCODE "Y"
- cb(i) : THE  $i$ th BIT OF COLOR CODE "C"
- C1(I,J) : COLOR CODE AT THE RIGHT EDGE OF THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- C2(I,J) : COLOR CODE AT THE TOP EDGE OF THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- C(I,J) : COLOR CODE SELECTED FOR DISPLAY AT THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
- ⊕ : EXCLUSIVE OR BOOLEAN FUNCTION
- ⊙ : INCLUSIVE OR BOOLEAN FUNCTION

EXPLANATION OF PROGRAM VARIABLES OF FIGS. 19 - 22

FIG. 18

NOTE:

\* SEE FIGURE 18 FOR EXPLANATION OF PROGRAM VARIABLES.

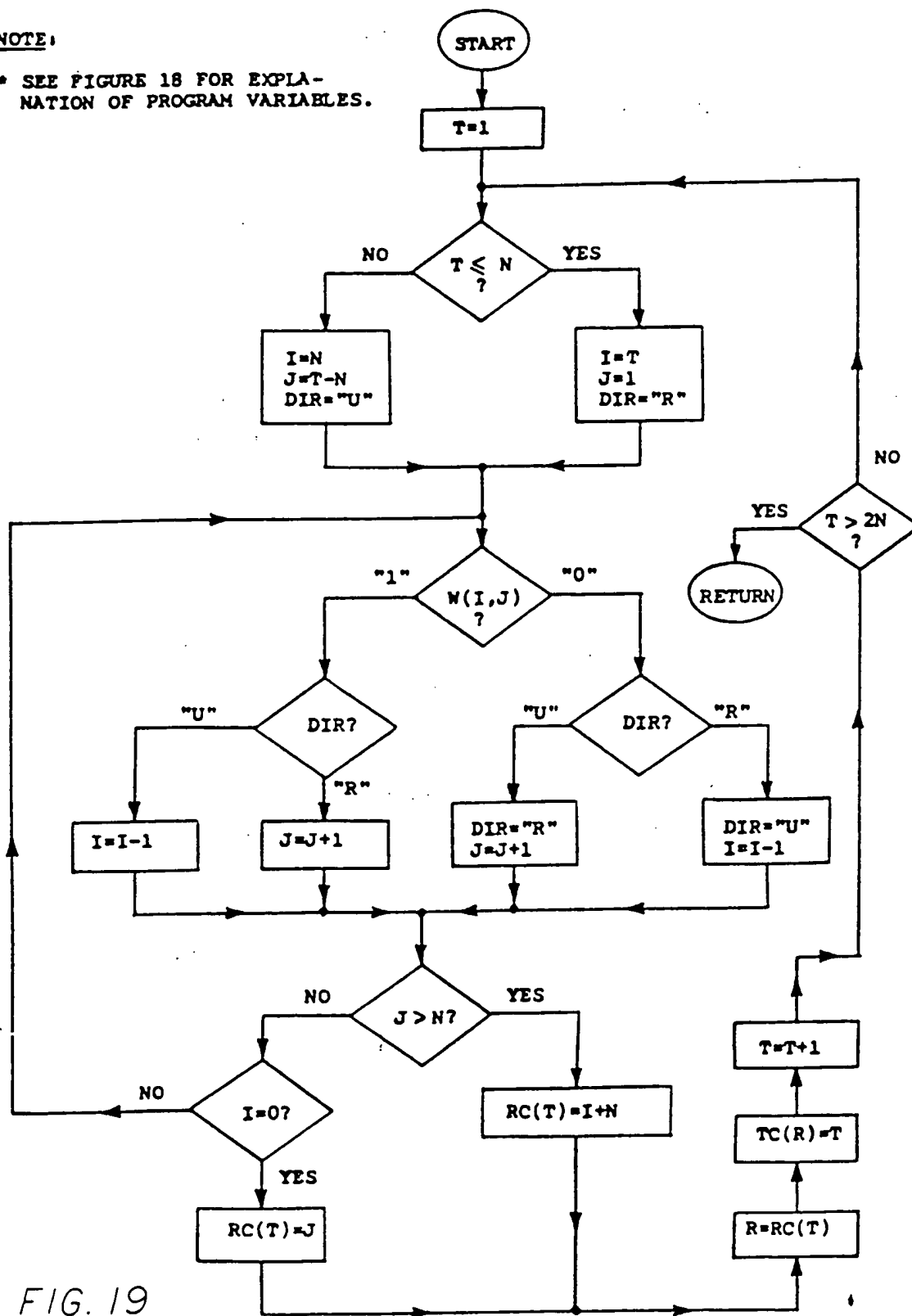
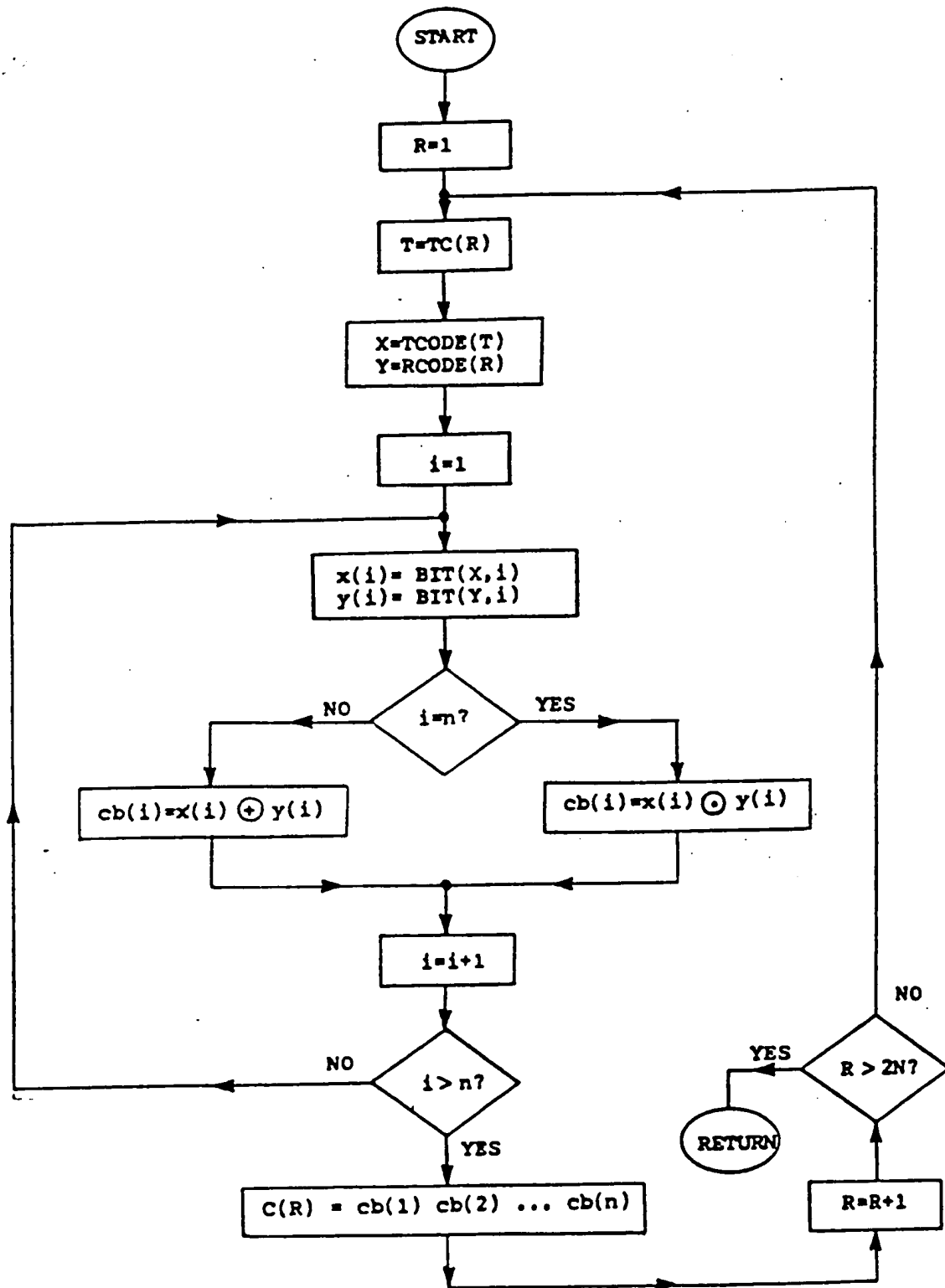


FIG. 19

**NOTE:**

- SEE FIGURE 18 FOR EXPLANATION OF PROGRAM VARIABLES.

FIG. 20

NOTE:

- SEE FIGURE 18 FOR EXPLANATION OF PROGRAM VARIABLES.

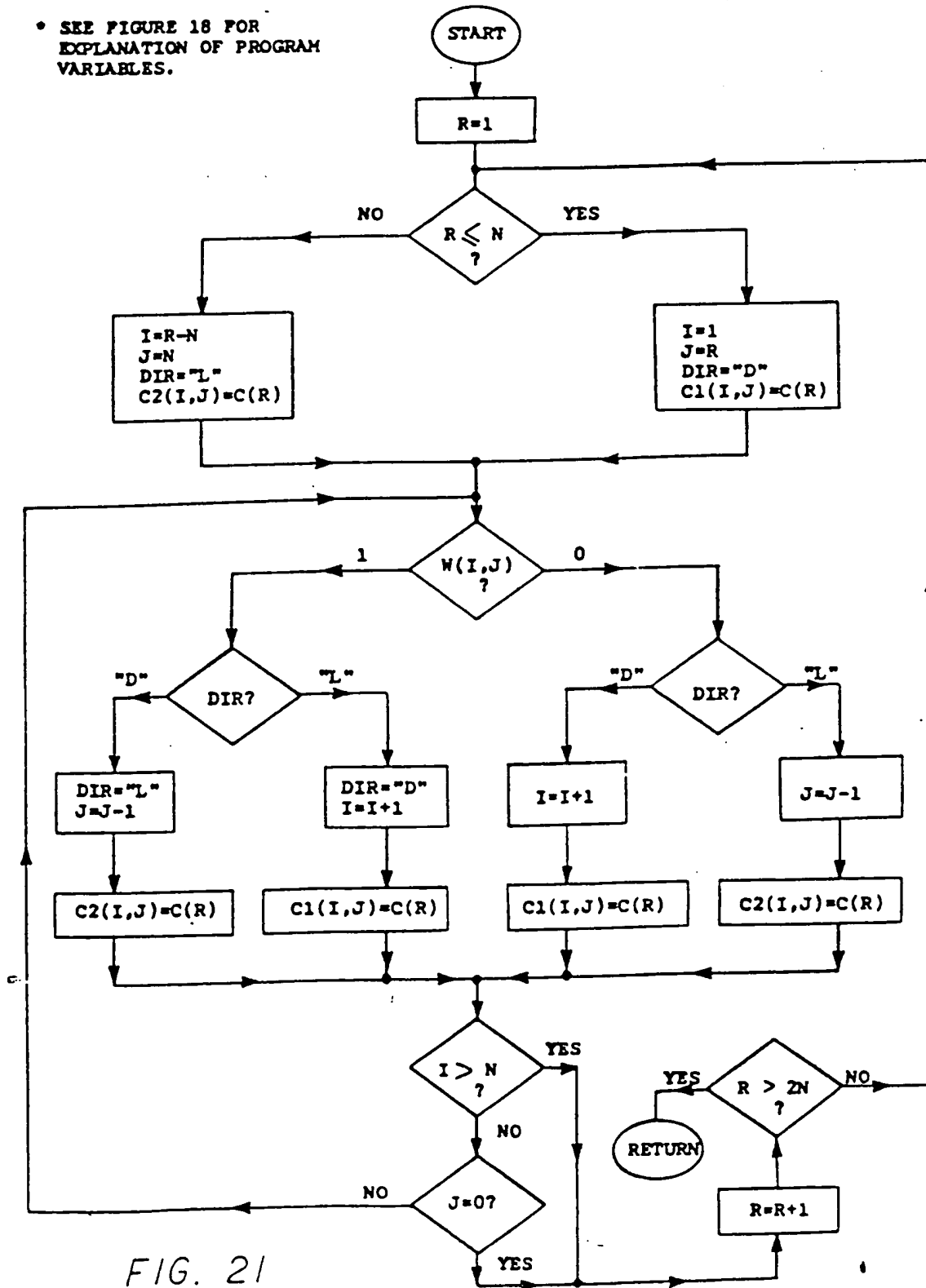
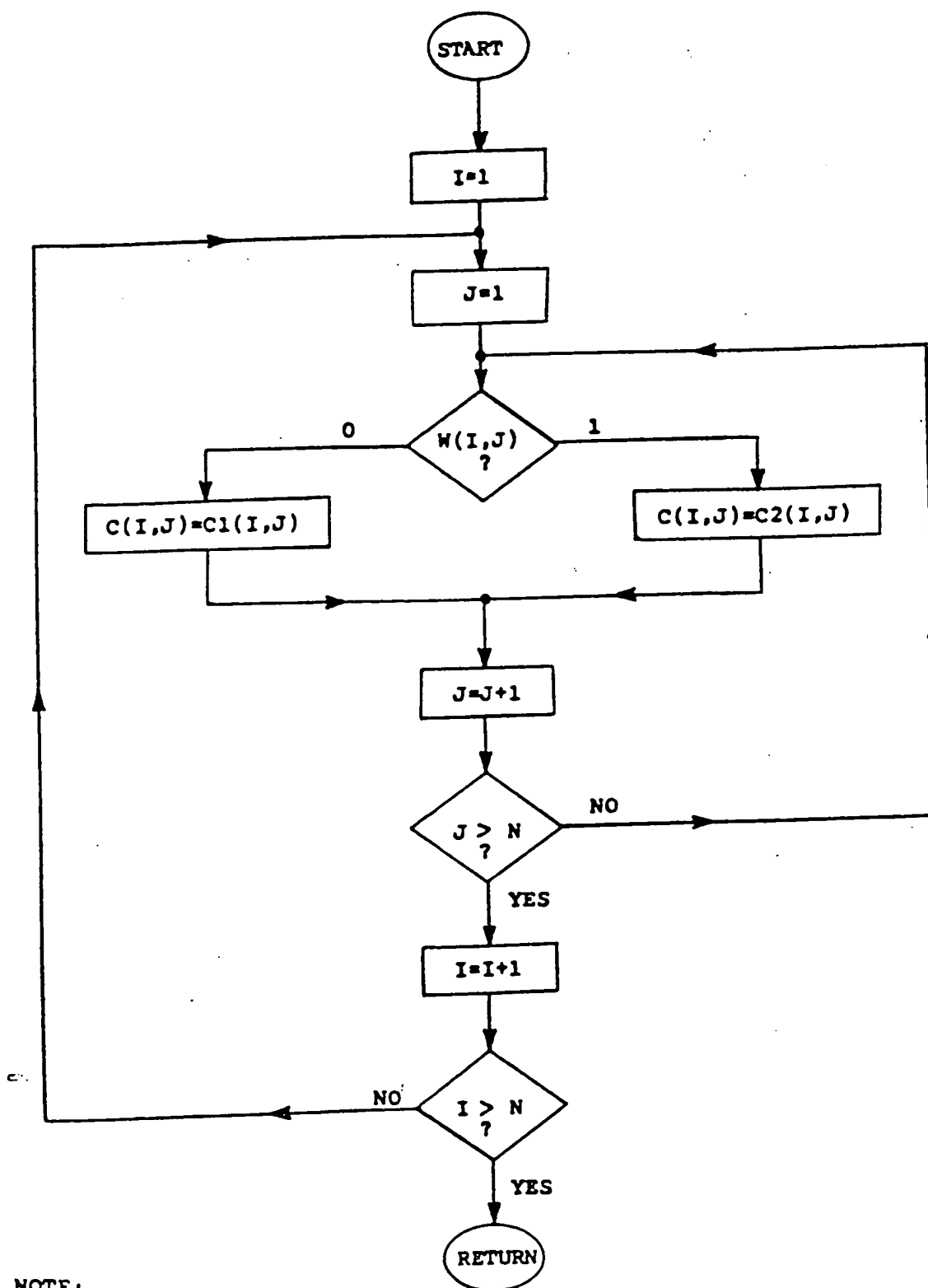






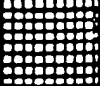



























FIG. 21







NOTE:

\* SEE FIGURE 18 FOR EXPLANATION  
OF PROGRAM VARIABLES.









































































































































FIG. 22


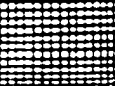


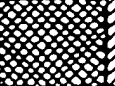
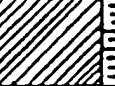


OPCODE	0 0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
000								
001								
010								
011								
100								
101								
110								
111								

COLOR CODE	100	101	110	111
COLOR				

COLOR ASSIGNMENTS FOR N = 4

FIG. 23

OP- CODE	0 0 0	0 0 1	0 1 0	0 1 1	0 1 0	0 1 1	0 1 1	0 1 1	1 0 0	1 0 0	1 0 1	1 0 1	1 0 1	1 0 1	1 1 0	1 1 1	1 1 1
0000																	
0001																	
0010																	
0011																	
0100																	
0101																	
0110																	
0111																	
1000																	
1001																	
1010																	
1011																	
1100																	
1101																	
1110																	
1111																	

COLOR CODE	1000	1001	1010	1011	1100	1101	1110	1111
COLOR								

COLOR ASSIGNMENTS FOR N = 8

FIG. 24